Project	Fabrication and Characterization of Nanoelectronic Devices and Circuits		
Owner	**Start Date**	02.06.2021	
Page 1/3	**Revised Date**	July 28, 2021	
Samples		6 SOI samples, 6 bulk samples	

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Session 3: Active area (mesa) definition of SOI samples

Nr.	Description	Tool	Date	Duration	Parameters
1.	HMDS Coating	HMDS coater	02.06.2021	5-8 min	135°C
2.	Photoresist Coating	spin coater	02.06.2021	4 sec 60 sec	1000 rpm 3000rpm
3.	Soft bake	hot plate	02.06.2021	90 sec	95°C
4.	Optical lithography	laser scanner	02.06.2021	14 min	405 nm 30% transmission 1505 mJ/cm^2 25.3 °C 4step-752 mJ/cm^2
5.	Post exposure bake	hot plate	02.06.2021	90 sec	125 °C
6.	Development	wet bench	02.06.2021	45 sec	Developer MIF AZ726 rinse with DI water
7.	Reactive ion etching	ICP-RIE (PlasmaPro 100 cobra)	02.06.2021	100 sec	15mTor 20W
7.	Reactive ion etching from another group	ICP-RIE	02.06.2021	120 sec	Descum Pressure:10 mTor HF:10W O_2:20 sccm He Backing:10 sccm Temp:45°C
7.	Reactive ion etching	ICP-RIE (PlasmaPro 100 cobra)	02.06.2021	100sec, 30sec	Si-etch, SF6/O2 Etchrate: 3.7nm/s Target depth: 340nm/80nm Pressure:15mTor HF:20W ICP:0W SF6:37.5sccm O_2:11 sccm He Backing:10sccm, Temp:45°C

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Figure 1: caption.

Session 4: Formation of gate dielectrics

Nr.	Description	Tool	Date	Duration	Parameters
1.	RCA clean		09.06.2021		Piranha etching piranha solution: 150 ml H_2SO_4 + 50 ml H_2O_2, 10 min DI water rinse 10 min 1 % HF till surface is hydrophobic, 20 sec DI water rinse 10 min SC-1: 125 ml H_2O + 25 ml NH_4OH + 25 ml H_2O_2: 10 min DI water rinse 10 min 1 % HF till surface is hydrophobic, 20 sec DI water rinse 10 min SC-2: 150 ml H_2O + 25 ml HCl + 25 ml H_2O_2: 10 min DI water rinse 10 min
2.	Oxidation		09.06.2021	130 sec	To obtain 15 nm d_{ox}

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Figure 2: caption.

Session 6: Lift-off, silicidation and definition of gate electrode

Nr.	Description	Tool	Date	Duration	Parameters
1.	Lift-off of alumininum layer		24.06.2021		Bathe with Acetone and Propanol Flush with syringe Dehydration 150°C
2.	Primer coating (HDMS)		24.06.2021	3 sec 1 min	1000rpm 6000rpm
3.	Soft bake	hot plate	24.06.2021	90sec	95°C
4.	Photoresist coating (AZ S214B)	spin coater	24.06.2021	3 sec 60 sec	1000rpm 3000rpm
5.	Soft bake	hot plate	24.06.2021	90sec	95°C
6.	Edges removal with q-tips dipped in acetone	q-tip		24.06.2021	
7.	Overlay Alignment		24.06.2021		
8.	Short Exposure		24.06.2021	2 sec	Hg lamp 405 nm
9.	Reverse bake		24.06.2021	2min	120°C
10.	Flood Exposure		24.06.2021	15sec	
11.	Development	wet bench	24.06.2021	36 sec	MIF 726 DI water rinse for a few minutes

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Figure 3: caption.